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By vote of the board of trustees it was decided last year that at the close of the school year 1911 the academy of the University of Illinois, which has existed since 1876, should be discontinued. Mr. J. P. Gilbert, who was an instructor in zoology, has just been elected head of the department of biology and agriculture in the Southern Illinois Normal at Carbondale. Another member of the academy force, Mr. S. E. Boomer, goes also to the Southern Illinois Normal as head of the mathematics department.

DR. HANS ZINSSER has been promoted to be professor of bacteriology in Stanford University.

THE School of Engineering of the University of Pittsburgh announces a new course in mechanical railway engineering which will be under the direction of Mr. D. F. Crawford, general superintendent of motive power, Pennsylvania lines west of Pittsburgh. Students working in this course will combine their theoretical course with practical work in connection with the Pennsylvania lines west of Pittsburgh.

THE Bryn Mawr European fellowship has been awarded this year to Miss Helen Tredway, who specialized in physics and chemistry; the president's European fellowship to Miss Mary E. Pinney in biology, and the Mary E. Garret European fellowship to Miss Margaret E. Brusstar, in mathematics.

DISCUSSION AND CORRESPONDENCE

THE ACOUSTICAL ENGINEER

THE subject of acoustics as applied to auditoriums deserves a much greater interest on the part of physicists and architects. It is not just, however, to offer criticism without considering some of the reasons for this lack of attention. The physicist realizes that there are many practical problems which constantly tempt him to turn from the performance of his proper function. Moreover he knows that physicists (Sabine and others) have already obtained results far in advance of what are actually utilized by architects to-day. On the other hand, the architect is a man of many

troubles and is therefore not inclined to add to his cares by indulgence in experimental work or by applying Sabine's formula to a proposed auditorium. His fee does not cover such expert work and he very naturally attempts to do well that for which he is paid. In short, there is not a sufficient incentive for active interest on the part of either the physicist or the architect.

In spite of the excellent work that has been done, particularly by Sabine, our knowledge of the subject of architectural acoustics is quite limited. It is true (although doubted even by some physicists) that one can not only correct excessive reverberation of an auditorium already constructed, but he can even compute what effect will be had in a proposed structure. This, however, is only a small part of the achievement that will some day be possible. Again, our methods of correcting excessive reverberation are not entirely satisfactory either to an architect, or to a layman who desires the remedy to be both permanent and sanitary. It is not for the physicist to improve our present methods of remedying excessive reverberation for this is a practical problem involving structural knowledge. Neither can he be expected to think of the problems of theoretical interest which will sooner or later confront one engaged in applied acoustics.

It seems, then, that the future progress of the subject of acoustics as applied to auditoriums rests in a very large measure upon the activity of what might be termed the "acoustical engineer." This engineer must be an architect of scientific training—one who will be interested alike in the architectural and scientific aspects of the problems. Generally speaking, each auditorium needs a slightly different study and one who is to succeed must have sufficient scientific interest and ability to make the necessary investigations. As so well known, absorbing material applied to the proper area of surface will correct for excessive reverberation. But the amount of area that can be utilized, the character of the interior finish, etc., enter into the

problem. The absorbing material applied should be tested experimentally so that the area covered will give a satisfactory result. Moreover, in cases of well-defined echoes each auditorium will probably require more detailed study.

There are an increasing number of architects in this country who are actively interested in the subject of architectural acoustics, but, with one exception, they have not devoted much time to experimental investigation. This exception is an architect who is devoting his entire time to acoustical engineering. On the other hand, the public does not realize the present knowledge on the subject of architectural acoustics and the architect does not make a serious attempt to educate. The purpose of this note is to call the attention of scientific men to the acoustical engineer and to urge their active interest so far as the education of the public and the recognition of the need of such a consulting engineer are concerned.

G. W. STEWART

THE STATE UNIVERSITY OF IOWA

ACADEMIC EFFICIENCY

TO THE EDITOR OF SCIENCE: Since on several occasions there have appeared in SCIENCE certain criticisms of the Cooke report of the Carnegie Foundation, I hope that you may be willing to publish a brief statement of an opposite view.

Both the report itself and its introduction by Dr. Pritchett state clearly that the opinions of an "outsider" were considered desirable. The recent criticisms of collegiate conditions by many who have not actually studied at first hand the things they condemn seem to have led to the investigation upon which the report is based.

Most of the opinions set forth in the report are precisely those which any well-informed person not connected with a college would hold after a similar study of what actually exists. Moreover, not a few persons on the inside of the college world hold quite similar views. In some ways certain of us go even farther in condemning a part of the things

that are more or less characteristic of the college life of to-day.

Especially in trying to fit young men to meet successfully the practical conditions of the real business world, we lament most deeply the woeful lack of the "snap and vigor" which Mr. Cooke found wanting in most of the institutions visited. The "lack of intensiveness" appeals to us much more as a hindrance to the proper preparation of our students for what we know will be required of them in the near future than for any other reason. Not a few of those who employ many highly trained workers positively condemn the college graduate, and will not hire him until he has been whipped into line by sufficient practical experience after his graduation. Some of us know that this is not on account of the subjects which we teach or do not teach in our courses, but rather on account of the general attitude of many of our graduates toward the work that may be assigned them. During the first half year of the cooperative system at the University of Cincinnati, Dean Schneider says he was frequently called to his telephone to listen to something similar to this: "That cub you sent down here thinks this is a university. He won't work." Far too many young men in the colleges and in the collegiate departments of the universities "won't work." Too many students in all of our institutions have no proper conception of the real economic value of their own time or of the opportunities within their grasp. Such ones do not make efficient use of what is provided for them, in funds and in equipments of various kinds. They cut class and laboratory exercises without adequate reasons. They try all kinds of schemes to get out of regular and systematic work. They neglect to do many of the things assigned to them, in many cases up to what they consider the very lower limit of a bare passing grade. Sometimes they ask if they can "cut" this or neglect that and still have a chance to "pass." They give time, energy and most of the thinking that they do, to things which can not be of the least permanent value to them in later life.

Such students do these and many other